

INDEX

2013 Field Season Greenland

Property of Konrad Steffen

Swiss Federal Research Inst. WSL

Address Zürcherstr. 111

CH - 8903 Birmensdorf, Switzerland

Telephone

This Book is manufactured using a paper made from wood-free materials and is acid-free and archive safe.

815250



- 29 April left ZRH to CPH
30 April Kanger to Swiss Camp, after arrival
1-4 May Storm at Swiss Camp
5 May 10 m tower dig out
6 May Turnover w/ wind + Jay's fish
8 May JAR1
11 May JAR1 redrilled, down 10
13 May JAR - Swiss Camp here, snow, thin, soil, orange
14 May 16 m tower set-up, JAR1
15 May S16 pull down
15 May Swiss Camp shows coriolis
16 May JAR2
18 May Jay, Gipi, Abu, Oliet laying cap
20 May laying Swiss Camp
20 May UP SO, CP1
21 May S-Dome
22 May UASA SC, Soddle, Dye II, Swiss Camp
23 May Russell Glacier
25 May UASA - u NEEM
26 May Humboldt Petermann, crash!
28 May Qaanaq, Gits Tuni - u, Davisborg
29 May UASA - E, Summit
30 May Sondy - End of spring season

Moulin Experiment May 2013

6 May Food list of Swiss Cangs, spring

6 May download latest data

16 May Thulessot

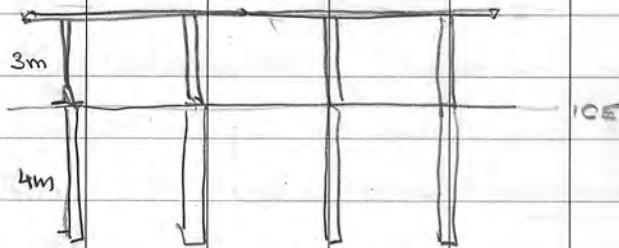
12 May Ilulissat - Saqqaq Corp

14 May ice melt measurement

15 May Moulin filming ✓

16 May DAV and return to CTF

Swiss Caps approach



it makes ~2m of rise in 2012!

Does this mean we will lose the platform again in 3 years? No!

We need plywood to shield the sunny side, and beams to reinforce the legs with crosses.

Beams: 2×4

$12 \times 9.2 \text{ ft}$

$12 \times 12 - 13 \text{ ft}$

across $6 \times 9.2 \text{ ft}$

2×2 vertical beams

Plywood: $4 \times 8 \frac{1}{2}$

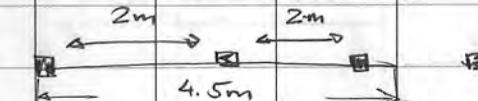
$26 \times 16 \times 8 (\frac{1}{2})$

seen a lot?

seen $\frac{1}{2}$ br

Schalls

4x6 inch cedar
original beams were $12\text{'} (365 \text{ cm})$ ($4\text{'}, 10\text{'}, 12\text{'}$)

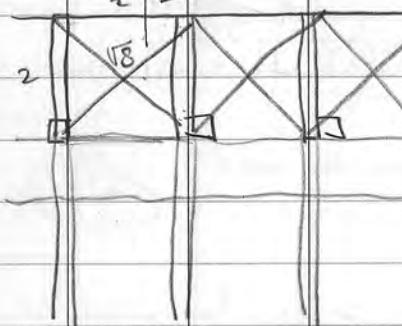


TEOT

bags per carton (number)
cm

$$= 111.33 \text{ inches} = 9.27 \text{ ft}$$

$2 / 2.828 \text{ m}$



6 per front

probably is

5 plywood for
short side

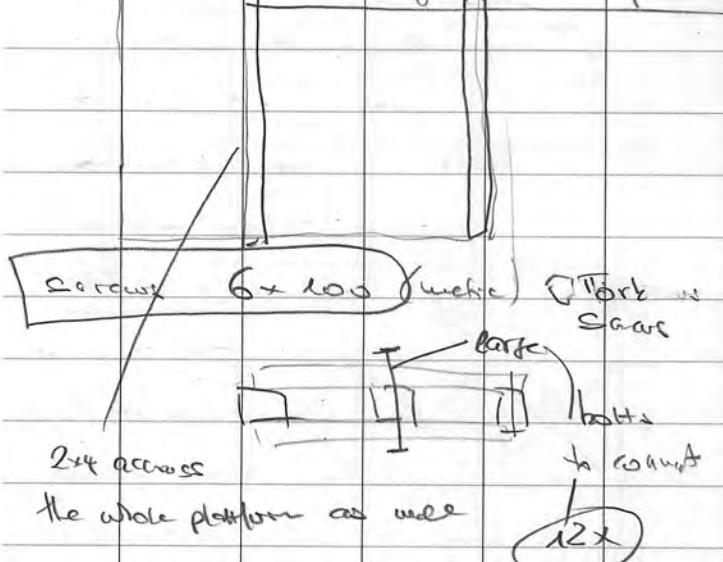
12 poles for sides along the fence (9.2 ft)

12.96^2
 3.66 m they are longer with
 $13.14 (4.1 \text{ m})$



26.2.12

Screens for lens Camp



wood order!

27.2.12

PE Station leaving

The DC3 finally arrived around noon
and we will be leaving at 16:00 to
HOHO, suited to Ilulissat, russian plane
to TROLL (horwerps station) and
at 22:00 from there to Cape Town,
arriving on Friday evening. My research
flight will leave on Saturday evening 6.2.12

GP 50

Estimated GP 50 2013

69° 44.65' N, 48° 08.131' E (20°)
~33°

dd 69 44 46° N

48° 08' 18.5'' E

. 131 : 60 = 22
11

. 659 : 60

0.5 = 30

0.6 33

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- 16 May JAR2
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- 20 May long Swiss Camp
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8 May

down to, JAR1

Drove to Down to which is more than 2 extender ant, at a 20° angle

Down to $63^{\circ} 30' 12''\text{N}$
 $49^{\circ} 33' 12''\text{W}$

Down to moved by 550 m compared to last coordinates

JAR1 has hit over because the last sleeve connection (main drift) broken

No signs of the GPS tower which has melted and one we need to search for it again

Snow ~ 1m at JAR1

Took pix of JAR1 + down to

Swiss Camp

9 May

Overcast with blowing snow from east. We hoped to have better weather, but to put up 10m towers, we need calm weather. Also to drive down to and JAR1

UTC, TCP PEP Driver not installed

10 May

Swiss Camp

Ans JAP1 + GPS

11 May

Still strong wind from E with blowing snow, but sky is clearing finally. Visibility is low because of the blowing snow. UV should improve by tomorrow.

Yesterday,

Began still not working, warming up in tent now and will use Ethernet cable to connect.

Redwired JAP1, was broken at first sleeve. Total melt in 2012 > 4m⁰

This was by far the largest melt ever recorded.

Recording stopped 11/26/2012 when the power cable pulled out from battery box.

Redwilled JAP1 5m into the ice with 2 exteniusus. Need to replace upper wind. Heft rod broken. Program correctly not working?

JAP2 GPS not found! fell also over!

11 May

Down to

work for JF21

11 May

Redrilled down to 5 m into the ice.

Jay just said it was not recording
during the last year's record melt.

We lifted the long pole out and
set it with 2 new extensors.

Hope the GRS will work this year again.

New Wind Sensor (upper)

• arm for short-wave instruments

• no replacement if not radiometer

• new GOES antenna beams

• load new program for CEM20 again,
and initialize the GOES transmitter,
with Azimuth ($\sim 207^\circ$)

12 May

Snow Camp

Nice calm day, only a few clouds. Good we to put up the three tents for our visitors Gigi, Alain, Olivier and Simon.

Still cannot find current and can't receive them via Infrared link.

Will finish the 10 m bar and do the snow survey today.

Fog cleared up 18h, our GPS was morning.

Snow Camp



13 May

Nice day, clear sky little wind. Today Gigi, Alain, Olivier and Simon should arrive in the afternoon. Hope all will well with the helicopter flight.

HNP Go Temp/Hum - how send 10 m bars lower arm

black temp. signal

white RH Signal

blue ST + power reference

brown +12 V power

clear shield

Celsius: multiple, 0.1, offset -40

% RH 0.1, 0

CR 201 200mV Slope Range

13 May

Helicopter to Russ Camp

The helicopter arrived @ 4pm with Gigi, Abi, Oliver + Simon on time. The two pilots stayed for coffee.

Alain inspected the camp and made fort preparations to 'reinforce' the station.

Simon + Dutch worked on the small sheds.

Oliver made a very good Tondee

Weather was very nice all day and also till mid night sun.

Suisse Camp

Windy again with blowing snow and some clouds. Will work on the platform and sledo's today.

14 May

SLII cannot send out attachments (graph) for IPAC report, but I can copy to emails with the Indian phone.

Hand talk reservation +299 94 33 43

18 May for 2 nights Alain Hubert + wife leaving 20 May

14 May

Swiss Camp 10m tower

HMP 45

New HMP 45C at lower

yellow temp

level at 10m tower

blue hum

purple AG

Orange control post C3

Red 12V

Black G 12V

Clear shield

All channels working at 10m tower

14 May

Went back to JA01 and replaced
upper wind (was broken off).

Both snow melt (series) are not
working? All the rest are fine again.
There was one channel from the Walkyver
(reset) and - working again

No net radiometer - needs replacement.

Put 3 Goes antenna poles in and
changed orientation again (207°).

The Goes transmitter responded to
the SFI program.

14 May

Swiss Camp

Swiss Camp

15 May

A new level of platform was built
below our main platform for
storing the shelter's and fuel

No wind but slight snow from last.

Sun out through clouds.

With continue second level of platform
for shelter's and fuel, and maybe
GPS or SAR 2 with

15 May

S 16 GPS + AWS

Time of data logger

GUT 5: 13 PM \rightarrow 10:58 AM station time!

~ 6 hours too slow!

We took the station down, including
GPS. The pole was bent by its
weight



Unfortunately I did not get any data
from the logger - maybe I should not
have the power disconnected.

CR10X SN 8374 / X17507

Check with new battery again

Swiss Camp Snow Survey 15 May

Aws Tower

Snow to underside AWS board 235 cm

Snow to underside board area 238 cm

108, 115, 105, 107 cm snow $\bar{x} = 108.75$

(Tower drilled 55cm into the ice in 2012)

~ 0.7m snow ~ 2.00 m ice melt ~ 2.2 m

Still 3.5m into the ice

No in tower (new location)

Snow to lower bottom board: 23 cm

Snow to low area 94 cm

150, 165, 162 (105, 102)

AWS Tower $2012.4780 = 0.378$ m

$2012.6781 = 3.05$ m

2.7 m below

$2013.3745 = 2.93 \sim 0.6$ m

was before
the last
snow storm

15 Mar Jay - DICK-13 cancellation

Michele Lagger @davos.ch

Corina Schmutz @davos.ch

Dart # 726108

ord. # 233731

J. Zuray

JAR2

16 Mar

Good wx and drove with Ulrich to JAR2. Smooth ride because of recent snow fall. We reached JAR2 without any problems and Ulrich found the station, just as we arrived at our old coordinate.

Took station down and packed all instruments and battery box, except the main pole which was frozen in the ice. No problem on the way back, were driving Gokurklu from JAR2 to SC.

17 May

Swiss Camp

A more lazy day. Installed the solar panels $6 \times 20W = 120W$ for the 1200 Ah battery bank.

Jay went over now to go 18 for a new GPS setting. He has not finished

the blue shidos and most likely will not do so before his departure tomorrow. This might have been his last field season!

Fran and Deach are making a new star for the platform and Nitto sits behind his computer - probably working on a movie.

Swiss Camp

18 May

Departure day for Gigi, Alain, Jay and Olivier. Altimeter is scheduled for 11:30 AM arriving at SC, wx is overcast with ~ 1000' ceiling. Last holes and blue

sky visible. No wind and good horizontal visibility.

The blue shidos not working yet, engine has been installed, (and no sparkles or fuel?).

Jay will contact the Yamaha shops.

19 May

Preparation up 50, 8001

Pull out tomorrow 20 May

19 May

Up 50 $69^{\circ} 44' 43.5''$ N, $48^{\circ} 08' 41.9''$ W

Call at 7am mobile #1 with wx.

Wdi got an update tonight at 9pm from the pilots by email.

CP 1

80 30 126 E 00 41 10

AZ 20° EL 13° (true north)

N 47

Multiplexer not working, needs to
replace!

$69^{\circ} 52.545''$ N, $47^{\circ} 00.891$ W

$69^{\circ} 52.32.7''$ N, $47^{\circ} 00' 53.5''$ W

- Take leader along
- Take spare battery box along
- Spare multiplexer
- Counter, tools, debris tools

20 May

Leaving Sc

Wx at 7am to Kango, SHV
overcast w/ snow.

Wx at 8am, slight improvement
Forecast is good for moon.

Plane left Sandy at 11am and
arrived at Sc 12:30 local
for up 50 after unloading 5

Propane bottles

Closing Game Camp

20 May

1. First was cargo only
2. Repeat 4 per and cargo/mash
3. Flight tomorrow thru old Shadow's

20 May

EC - UP SD - CP1

UP SD new coordinates

69° 44' 40"

48° 09' 03"

Exchanged 87 GPS. Connected
new unit but did not see
the power lights (?). Was this
the programming?

CP1

20 May

69 52 31.7 N - new coordinates
47° 01 01.8" W

All channels were working from CRI000
data logger, but not from multiplexer (?)

Checked all cables of multiplexer and did
not find an error - need to replace
CRI000 next year (did replace multiplexer
last year).

There was no transmission - light of
GOES showed "data in buffer" and
output of GPS sync was on, also I
reset the GOES transmitters (removal fuse).
Orientation of 209° true north was ok.

21 May

Sondy - South Dome

Perfect day in Sondy, waiting for noon
for clouds to dissipate at South Dome
we will need to extract and replace
the lower wheel (or burned).
The air temp is only -8°C.

Weather could change to snow, hence
we have to bury, maybe go to S.
Later today to pack up the two sleds
and the sledge.

Azimuth 213/18 True North

63° 08' 56,6" N 44° 49' 03,7" W

2957m

21° min time to extract lower

Snow pit in Nikita's Tote boat

Extended ~2m, good for 2-3 years
broke

South Dome

21 May

Broke Net Rad while extending down,
was able to fix with antenna bar
and tape.

-Fixed pressure, made junction new
All instruments are running now.

Snow pit by Simon in Nikita's field
boat

22 May

NASA - SE

$66^{\circ} 28' 42.3'' N$, $42^{\circ} 29' 46.0'' E$
2383m

arrived 09:35L from Goody

finished 11:25L

Full-length extension, all instruments

were running, except Snow HT(?)

Snow pit by Simon in Vibko's field
back

Saddle

$65^{\circ} 59' 58.9'' N$, $44^{\circ} 30' 07.6'' W$
2498

arrived 12:15L

left 13:40L

Exchanged upper sonic which works again
(lower sonic also broken, exchanged but
data logger stopped working. Removed
sonic again and all worked (except
no lower sonic)

Snow pit by Simon in Vibko's field back

22 May

Dge - II

66° 28' 54"

46° 17' 18" W

2111 m

Arrived 14:15

Arrived at 14:50

Downloaded the data, lower
Snow height sensor out, but was
too high to replace. The pressure
sensor also acted strange, needs
to be replaced next time.

Snowbox group (4.7 m + 3 others) back
us on our flight to Sandy

Sandy - Svalbard Camp

22 May

Arrived in Sandy after spending 3 hours
and plane left again with Nilsen,
Simon and Perle to Svalbard Camp
to bring the last load of two
old sledges and the Vito sleds.

This concludes our so-called field
travels and we have a day off
tomorrow with an excursion to
Breed glacier

On Friday we are planning to fly to
NASA - U and NERI

23 May

Sandy - Russell Glacier

We had a day off due to Twin Ott's sharing. Went to Russell glacier and the ice margin. First it was overcast, but then became a very nice clear day. Saw Hawcox, Rendev, and some glaciers. We walked to Russell glacier over to small pass just past the gate with a look.

The Twin Ott's took a day off as well (not day) because the other group had "weather" - or were not satisfied with their work.

Sandy

24 May

Stayed in town and replaced to all emails, packing for northern traverse, and for return shipment. Packed for northern traverse and for return shipment.

24 May

Northern traverse preparation

NASA - U : transmitting!

Pressure works only every few hours!
with big jumps. Needs new sensor?
Needs extension and might battery box.
(short extension)

NEEM transmitting!

Needs new pressure sensor (not working)

The rest looks good

Humboldt no extension

New Argos program?

Petermann no extension needed
(is transmitting?)

Tunun - N : new data logger + Sat. transmitter

no extension needed

NARE F : may be extending

Northern Traverse

24 May

Svalbard - NASA U - NEEM

NEEM - Petermann - Humboldt - Tununag

Tununag - GITS - PEER - Tunun - Daubring

Daubring - NARE F - Lennart

Summit - Svalbard

Wednesday

3 extensions needed

NASA - U ; GITS ; NARE F, 3 Skewers

2 Battery boxes

CP1000 + Argos transmitter + antenna

Wind Spare Sensor

25 May

Northern Traverse Study - Upernivik

Loaded the plane, left at 7:40 to

wire house and packed plane by 10am

NASA - u

25 May

Coordinates: $73^{\circ} 50' 27.3'' \text{N}$, $49^{\circ} 31' 09.2'' \text{W}$
2460m

Today flight from Bowly to Upernivik
(678km), NASA - u, and DEEN for
the overnight. Weather report is good
for the next two days.

Needs:
- extension
- new battery box!

All sensors seemed to work

Arrival: 14:45

Departure: 16:15

Snow pH sensor in Nikita's field book
No problems; put new battery box with
2x 100 Ah batteries, all worked fine!

Maybe pressure is out, had some funny
readings once

25 May

NEEM

ARGOS Stations

Station coordinates not then

01463 transmission in 9/2012

will arrive around noon

9:30 WX call

107284 transmitting

Peterson

107283 "

Humboldt

107282 not transmitting GTS

107285 not connected Tern-N

Argos transmitter ST 13 (old one)

CSI
raw two byte binary format

Argos ST 21 transmitter (two data formats)

FP2 : CSI two byte floating decimal point

26 May

NEEM

Humboldt

26 May

Cold NEEM at 15:30, Train was a

We stayed at the NEEM station overnight. Got late returning from Danner with
Very nice camp just for the last of us. 4 drums of fuel.
Made spaghetti and wine for dinner.

Humboldt coordinates.

Train other will arrive at 8pm at NEEM. $78^{\circ} 31' 40,0$ $56^{\circ} 50' 26,0$ 1962m

Coordinates: $78^{\circ} 26' 28,20$, $56^{\circ} 04' 54,1$ Transmission is working, but I have not

Height: 2518 m been able to change the Tutton code to
correct the data.

Checked again on 28 May during refilling

stop and all channels were working.

Need to raise the Campbell box, arms

Pressure was at $\sim 450 + 400 = 850$ mb? cm far above the ground.

checked program for offset at pressure

All channels running, but battery did not
work through the winter. Replaced battery
box and box did not stay

26 May

We met the CReLL group on
Shiloo's putting up weather stations.

The web is given above

Coordinates:

$80^{\circ} 05' 38.6'' \text{N}$ $58^{\circ} 07' 16.0'' \text{W}$ 902m

We had a hard landing and crashed the Twin Otter. The left wing hit the ground first and the wing tip is bent upward. It seems we might be grounded for a while. The pilots want the damage and called Inland for a rescue plan with spare part which should arrive tomorrow, Monday afternoon.

Serviced the station; all channels running. Removed the snow thermometer cable, the broken battery box from last year, and the second Campbell box which was used for batteries on Petermann R.

There was 1-1.2m melt at Pet in 2012!

27 May

Petermann
feeler

Station 22

Petermann - Ranney

28 May

Still on the glacier waiting for rescue plane.

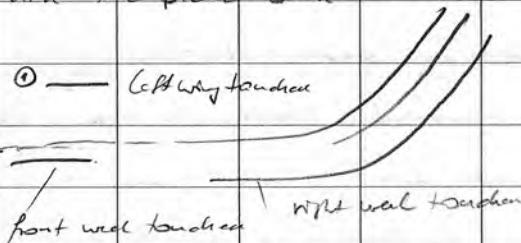
We have one lost sheep yesterday night and

I had some hide bread for breakfast.

Weather still good, some high clouds but left wing was replaced.

only other wind and "wind".

How did the plane land



② ~~XX~~

Rescue plane will fly via Station North or

Daneborg is closed due to wet, ETA ~10pm.

Pole size: JAP 23V took one pole back
with sleeve to Sandy

The second Trans Oltar arrived yesterday night

at 10:30 pm and the started to repair

the plane until 7am today. Part of the

wings still good, some high clouds but

left wing was replaced.
We switched the plane with our old
pilot and CA in Ranney at 10:45 am.

The plan is to go to GIB, NEEN, TANLU
and Daneborg today (Tuesday),
to Summit on Wednesday and Sandy
on Thursday morning, in time to leave
for CPH on Friday noon.

Ranney and Cal at 01:30p. Met Hans

study at the airport

28 May

CR100

Station 4

Would need extension and lots of wheat
if we leave the station running.

Coordinates: $77^{\circ} 08' 12.4'' \text{N}$ $01^{\circ} 02' 29.4'' \text{W}$

Height: 1990 m

All channels running, Algoas was not

transmitting, I took the ST21 to be installed
at Turn-N.

Needs new lower arm, 1 wheel sensor,

1 HHP40 solar grill, and an extension.

Also needs new ST21 type transmitter.

Batteries worked through part of the winter,

but were low (9V) from Feb - April. Was a short stop - on the way

Is the ST21 using more power?

Turn-N

28 May

Coordinates: $78^{\circ} 01' 05.1'' \text{S}$ $33^{\circ} 58' 19.6'' \text{W}$

Height:

SP: 1023

Needs new CR1000 + ST21 Argos *

Download data first! if there was power,
otherwise I did download 2 years ago

*upload new Pet Argos program!

\Rightarrow New CR1000 was already installed with ST21

Program said Table 22(Pet) - needed to upload
the Turn-N Program now Two file 22

data sets!

All parameters were working!

to Darcborg.

Petermann was running the previous year as well!

28 May, Data logger wiring

Multiplexer 01000

12 V 12V

G G

clock C1

reset C2

Ex Ex 1

AG AG

Hi 1A

Lo 1L

AG AG

Multiplexer

1 SW-in

2 SW-r

3 neutral

4-B To snow

14, 15 To air blue/red

P1

P2

Wind 1 red/black

Wind 2 red/black

CR1000 wiring

3 SF HMD 1T₁ yellow

4 SF HMP27₂ yellow

5 SF Hums blue

6 SF Hm² blue

7 SF Wdir1 green-white

8 SF Wdir2 green-white

FY2 both black & R+W (old made blue)

12V pressure red pressure - black

C3 Snow 1 (green/white) 12V (red + black)

C5 Snow 2 (green/white) 12V (red + black)

| CS105 = PTB 1018 | Pressure

white = Hi	red = 12V	green (Ex - not used)
white = Gnd	black = GND	yellow (spare GND)

28 May

Daneborg

Panborg

74° 18' 02" N

20° 13' 45" W

arrived in Daneborg at 1 am (29 May)
and still got a nice dinner.

The first Sirius buoy can be arrived in
the morning. We flew over there in
the reward site west of Daneborg

Breakfast at 10 o'clock and then we
departed 1 pm (noon, 1 am austrian)

Daneborg - Hestersvig

29 May

The Ams is not transmitting from
(baseline)

Jan 2012. Could be battery or

antenna wound

Azimuth true N: 205°

arrive 16:30 e, were flying at Hestersvig,

this made the flight ~ 2.5 h longer with
the refueling, which could have been done
at Daneborg

HESTERSVIG refueling, ca 25km from

Daneborg. It is a lead mining town now
run by the Danish government because there is
so much pollution, they could not simply
close it.

29 May

NASA -F

Coordinates: $75^{\circ} 00' 05.2'' N$

2660m $25^{\circ} 59' 13.0'' W$

The antenna was looking below the horizon, that's why the transmission stopped. The card did not work. I did re-directed antenna, which was $\theta_2 = 205^{\circ}$ ✓ re-initialize a new card and all channels except the wind sensor were working. No slave was working speed and direction was out - could not fix it.

Snow pit as usual by Simon in Dibbe's field house.

Snow only 13cm to 1.5cm ice layer, 2nd ice layer at 45cm.

Summit

29 May

Coordinates: $72^{\circ} 34' 46.6'' S$ $38^{\circ} 30' 20.8'' E$

Height: 3215

downloaded the 9Hbytes data with the cable. This took 1.5 hours!

All channels are working.

Snow pit by Simon + Deconde, 62cm snow

An bush and we will leave tomorrow morning at 8 am for Sandy.

29 May

50 m Tower

3-4 steps above golden Box
on the right two cross arms are
loose and need to be fixed.

Also dimmed the dome buns and

got all snow down - there was a
list what will be left in red container

list

One or two instruments were broken while
the snow and ice was removed. Took pix
and have to inform David about it.

Did not move the arms up; need to get
a pix of their height now from
the science technicians.

Summit - Sandy

30 May

Left at 8:30 am Summit with two others
to return to Sandy.

Need to pack today and over ship
with Air Sea-Land (or tomorrow)

30 May

Shipment to CH

- 1 Large Edel hair cloth
- 2 u " Trimble GPS, ext, drill
- 3 Long Edel gun case
- 4 Large Farge Aws space parts .
- 5 Large Edel 2 tents, 3 mts, stove ^{Pc}
- 6 Large flat Edel Aws parts
- 7 Small Edel tools
- 8 GPE anchor
- 9 Large bag pack
- 10 GPE electrics and wire Edel
- 11 Aws space parts med Edel
- 12 small Edel el. h.e parts , bags
- 13 P.C bags. bags
- 14 Malaria drug

Shipment to US

30 May

- 6 Cleaning tools
- ② u Perde
- 3-6 yellow boxes (tool box in one yellow box)

Houcien Summer Experiment

25 July 13

Things to be shipped from Zurich

GPR antenna, electronics, Parasitic PC
(small and old one!)

GPC Triarch new one ✓

Equipment shipped from Boulder

• 100 m slate rope (box box)

• Latex, wind, batteries

Moulin 2009 Data

6 Aug

Laser / data / moulin2

A

B

C

D

E

U

Time

dist-mm

20 values
per sec

Counts for one rotation (no)

6 May

Swiss Camp Food Tuesday Spicy 13

Food Inventory

Dole Canned Fruits	: 9 + 1	14
Margarine	: 8	5 + 9
No bake Cakes	: 4	
Ritz & Krisp	: 12	
Raw Sugar 2lb	: 2	
Original Pad Thai	: 12	
Rice Noodles	: 2	
Peanut Sauces	: 10	
Spaghetti	: 13	
Penne/Rotini	: 8	
Energen C	: 1	
Poffertje Pancake Mix	: 3	
Chick, Berry Rice	: 3	
Mashed Potatoes	: 5 + 2 + 4	
Pad Thai Sauce	: 3 + 1	
Chinese Rice Noodles	: 2	
Chicken of the Sea		
Bread Mix	: 50	
Cream of Spinach	: 7	
Spring Vegetable	: 4	
Chicken flavor Noodle/Sauce	: 1	
French onion soup	: 1	
Ketohead Soak mix	: 3	
Parmesan Pasta sides	: 4	
Worcesters	: 14	

Swiss Camp Food Tuesday Spicy 12

cheddar / brocoli - Soak mix	: 3
Tuna in Water	: 22
Mac and cheese	: 20
2 lbs Brown Sugar	: 4
Boxes of granola	: 8
Sun Dried Tomatoes	: 20
Mushrooms	: 18
Salmon in water	: 10
Jams	: 8
Honey	: 2
Maple Syrup	: 2
mango chili Thai Kitchen Sauce	: 4
Goodness knows fruity bars	: 4 Boxes
Dried fruit	: 5 Apricots/cranberries
Raisins/craisins	: 5 bags
Spaghetti Sauce	: 10
Fondue Boxes	: 6
Tang / lemonade	: 4
Pie crust small	: 4
Pie crust Big	: 2
Coconut Milk	: 6

06 Aug Food needed for humans 13

- Milk ✓
- Bread for produce
- Fish fresh ✓
- Shrimps ✓
- White wine
- Red wine
- Margherita (some) ✓
- 'Orange soft' ✓
- Reader meat or steaks
- Yoghurt ✓
- Chocolate ✓
- Nuts ✓
- fruit bar
- chocolate ✓
 - kitchen paper
 - binpaper / tissues

Hand drill + saw

~~dm bit/hex~~

~~Saw blades~~

✓

downloaded latent data:

6 Aug 13

① (②)

JP 150 = 30 May 2013

2.163 (2.12)

JP 218 = 6 Aug 2013

3.498 (3.47)

$\Delta H = \frac{1.83m}{(13)}$

15 May - thinnings 1.2m snow @ AWS

→ we had ~ 20 cm ice melt

Haulix Free Company 8-9 Aug 2013

Left Boulder on 8 Aug in the morning
DEN - Cheyenne - Fraklin - CPH,
and then to Funeral next morn.

Now we are longer and waiting
for our flight to JAV; it is already
delayed by one hour.

Car is waiting for us in JAV
red black Toyota Hilux, key 000 000

air fare and charters:

AB. Jensen @ airgreen.com

+299 34 31 46

Monday 12 Aug 9 am JAV - SC

Thursday 15 Aug 11 am SC - Koenin

Tuesday 16 Aug 17pm Kunlun - JAV

Juillet

10 Aug

Some clouds in the morning, then most beautiful day.

Went shopping for food for our Corps and bought an electric drill (small version) for the Corps.

In the afternoon we got a kayak for the evening. Let the boat from Silva DR 1500 / h.

Perfect evening in the ice fjord; did lots of filleting (Kevin on camera), Can (organizing), Wolfgang (Red Bull), Sue (climber), and Kathy (vegas) and Simon. It was one of the best days in JAV!

12 Aug

St. L'Etat

Day off, did some errands
and met with Ned and
Frater for an interview
about SLR.

At 5 pm went to rec room
to meet students from Dartmouth
with Simon and we had
dinner together. Today first we
as well.

JAN - Swiss Camp

12 Aug

Left @ 8 am to the airport.

Had 350kg cargo and fitted
8 people in the 212 Helicopter.

6 hour car trip and the pilot
and the mechanic.

Flights to Swiss Camp, natural snow
molding, but only a few lakes.
Just north of SC is a very large
moldling. We did some flying
at that moldling.

The station has a large lake ~ (1m depth)
on the south side. The poles are now
at the 1/2 mark, that means $\frac{1}{2}$ of
the length is above the ice.

Can't go out to have to helicopter
for a few hours

I Chilissat

11 Aug

What a day - no clouds at all?

Preparing for the mountain and marine
expedition and for an other trip
to the ice fjord.

Note from Gretel Ehrlich

805-729-8152

or maybe 299-94002² could be wrong ✓

gretel129@yahoo.com

PPR on sea level rise and melt in G.S.

13 Aug

Swiss Camp

Worked on the platform in the morning, the two beams at the center towards South are too short, therefore the platform is slightly tilted.

We removed 2 pine beams, 6 propane bottles, 6 cherry stones, and the red large box with the steam drill.

We went the first day in the afternoon to the mountain towards the north,

where we had a slide in the port.

There was ~ 10 m/s water flow into the mountain, which first dropped a 30 degrees to a lower level at ~ 15m, and then down!

Swiss Camp

13 Aug

Cleaned up the old camp at afternoon and sorted out the wood for the fire fire in the evening, and all the iron to be burned out. We also found 3 WOODSTIE Trimbuck receivers.

After a good feeding we cleaned the fire with all the waste from the old platform. It hardly started and then after 20 s of gasoline, it worked much better. Went to bed at midnight, after a few hours of the fire

14 Aug

Snow Camp

It's starting to snow this morning,

+ 299 84 10 22 weather forecast

Ranger Cemetery

Refined
Ibilisit 59 + 854

1105, 1112, 1119, 1120, 1121

1151, 1152, 1177, 1178, 1179

1201

Call from Helicopter pilot at
9:30 tomorrow about weather

Sunrise Camp 14 Aug

Downloaded data.

Show height: 15 May - 15 Aug.

$$2.15 + 3.6 = \underline{1.45 \text{ cm}}$$

~ 1.1 m snow ~ 2.35 m ice melt

Repaired the 10m tower lower wind
instrument; the tail was broken and
hence the wind direction was not
correct.

went back to the snow camp for some more
fixing.

Moved all metal to Sunrise camp, and
3 fuel drums and 6 propane tanks

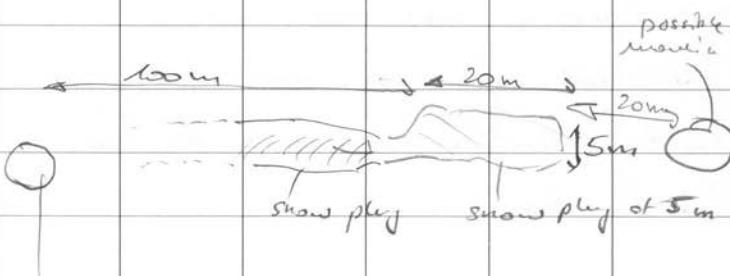
15 Aug

Snow Cap - Moulin

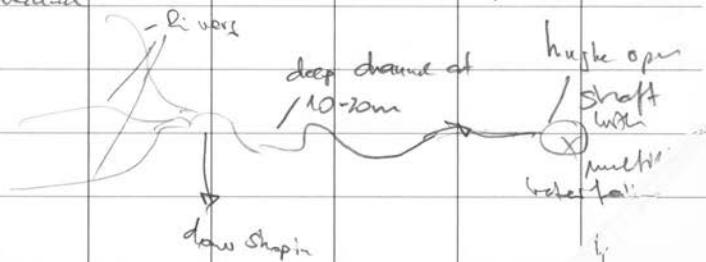
Koculin

15 Aug

Helicopters came at 10:30 for pick-ups. The large moulin opened even further and we left by the moulin (6 pax + cargo), and now was a long-open channel. Strange; somehow all were late in the morning. There was still a snow plug of 5-10m and I had not do much help digging depth. Not far we discovered an other the camp. On the way to collect an empty moulin while teams continued to the old dump, I fell into a crevace filled dump, with water and pulled a full load of water with one of me feet. Chilly! To the mountain tools which were more appropriate for moulin work.



few snow cover all the way to mouth, now very large mouth, also with a deep work like I no running water us. channel from the helicopter



15 Aug

Moulin - JAV

We did filming at the old and the new
moulin, picked up the Beloy camera
(Pikon 200) and went back to JAV
at 4pm with the Bell 212.

Put equipment in red container for flying
and unpacking next day.

Had a talk for moon and fernandes
buffet, our last night with the Red
Bell film team.

Wolfgang Knoepfle Wolfgang.Knoepfle@
terra Mater

Factual Studios GmbH

Wambachstr. 2, A-1130 Vienna

JAV

Packing for shipment back to ZRH

2 boxes 110kg - CHF 721.- (> 1000kg)
Air waybill 631 0188 1541

16 Aug

Rainy day in JAV, went for birds
after shipment with dinner. Seems

a very rainy day, ch in grey. We
are so glad to have left the
moulin yesterday and did not stay
another day as was previously planned.

Barnsby Tires

3.1.14

Folsom + Park

303-817 9714

Cars sales on consignment

VW 119.000 units 1999 JETTA

VOLVO 890 Turbo Stationwagon 1994
148.000 units

ARGOS Status

PE AIR

135781 CRAB 14C

PE GUNO

135787 CRAB 15F

PE BLUE

135788 CRAB 6A

GITS

107282

Hum

107283

TURB-N

107285

Pct

107284

Town + Alu Spring 2014

Tower extensions: 4

3 towers extensions in Kangri 4

42 stakes in Kangri, 5 stakes at SC

JAR 2 extension - 8 Swiss Camps

Ass 2014 Tour Spring 2014

no x-unit tower ext. 2013

NASA SE

x-unit heads extends

Saddle

x-unit tower high

Dyc II

S-Dome

no x-unit

tower high

NASA-U

no x-unit tower high

Pot

x-unit tower ok

Han

→ last 11/23/2013

no x-unit

heads extend

NEEM

x-unit

or moving box
tower ok

ORDER NEW:

1 extension / no stakes

We have 6 GPS poles, how many

more do we need?

GTS

x-unit

needs extension

Tunk-U

x-unit

ok

NASA E

no x-unit

ok, but not yet

Sumit A

x-unit

ok

Goes Transmitter

16 Feb 2014

LAR 2 / PE - AIR 8030A1E0 00:43:40

LAR 3 / PE - GUN 8030B296 00:43:50

→ La Colombe (Chilean Aut. station)

19.2.2014 AWS instruments in CH

Order Campbell instruments

19.2.2014

4 HMP 45

4 Temp/ther sensors ✓

6 radiation grills for 451

5 CS 500

2 radiation grills for CS500

4 TC air

1 CR. 1000 dataloger

2 CR 1000 data loger ✓

3+2 GOES transmitter

3+2 GOES GPS units

12 SR50 snow heights

15 spare parts for SR50 ✓

no Spare parts SR50

no pressure sensor

4 pressure sensors ✓

7 pyranometer (internal)

4 RH Young wire sensors

4 RH Young sensors ✓

no net radiometer

3 net radiometers ✓

1 SC 32B modem ✓

To purchase

for 2014

Fruit balance

Fondue

Scones

Gruyere cheese

Chocolate bars

Cake mix boxes

Knorr tortilla

(German pretzels)

Almond butter

Nuts

Dried fruit

Gelatin powder for drinks

Bars

Hummus

Oatmeal

Japanese sonic rice

Milkshake

Food 2013 at Game Camp

④

10

2x

▽

lots

lots

20

10

④

lots

1 bag

6 tubes

lots

10 boxes

②

2 bags

5 bags

Canned fruits

Margarine

Pasta

No bake cakes

Original pad thai

Rice noodles

Planut sauce

Spaghetti

Penne rotini

Energy C

Potato Pancake mix

Uncle Bens rice

Mashed potatoes

Pad thai sauce

Chinese rice noodles

Bread mix

10

6 ✓

2

4

12

2

10

13 ✓

7 ✓

1

3

3

11 ✓

4

2

50

Food 2013

cream of spinach	7
Spring veg	4
chicken flavor noodle	4
French onion soup	6
parmesan pasta	4
Nasabi	14
cheddar Broccoli soup	3
tuna in H ₂ O	22
Mac & cheese	20
brown sugar 2 lbs	4
granola	8
sun dried tomato	20
mushroom	18
Salmon H ₂ O	2
jams	8
honey	2
apple syrup	2

Food 2012

mayo dill tai chicken sauce	+
fruity bars	4 box
dried fruit (apricot, cranberry)	5
Spaghetti sauce	6 ✓
fondue	6 ✓
Tang / Lanak	4
pie crust small	4
pie crust big	2
coconut milk	6
17 days Swiss Camp @ 6 people	
- 6 days July	
11 days	
- 3 days fondue (10 pads)	
8 days dinner	

To purchase for 2014

EDA Airfare

1 April 14

- Price anden last Blk + Vostok

Beef for hay

5 bags -

crackers

7 pads

soup

3 bags

Louis Polar Research Center

Princess Elizabeth Station

Dickie Balkenhauer, Procur. van Belgie

Uruguay station

14.4.14 Tion Lithium Batteries

Tion Batteries

14.4.14

Ah

28V 66Wh

3 100	2.3	large drill (red)	7 Ah.	48 - 11 = 2.830	Milwaukee	428	<u>66</u>
4 700gr	3.0	Habita drill (gray)	(12 Ah)	BLV 1830	Habita Li-ion		<u>54</u>
2 500	3.6	Toughbook (cap Pearson) (7.2)	CF - VZ SU 1428			40	
1 500	6.6	Toughbook	CF - VZ SU 29A	Pearsonic		73	
1	7.65	"	CF - VZ SU 29A		4	<u>84</u>	
2 250	7.65	"	CF - VZ SU 30A		4	<u>56</u>	
1 400	4.4	Bogar - Hughes	3003702 - 0001 Rev. A	100 Ahns	48		<u>=</u>
1	5.4	Toughbook small	CF - VZ SU 48	Pearsonic (gray)		58	
2 2.	(2.5)	Trinamic	88004 - 03 Rev *	31CR 10/6C	27.8		
4 600	4.4	HALA	21 - 002404	HALA GPR		<u>52</u>	
1	(1.5)	Nikon 700	EN - EL 3c				
1	(1.9)	Nikon 700	EN - EL 15				

$$\text{Wh} = \text{Ah} * \text{V}$$

○ → 7 batteries packed

$$[10.65 \text{V} \quad 58 \text{Wh} \quad 5.4 \text{Ah}] \quad 5.4 \text{Ah} = \frac{58 \text{Wh}}{10.65 \text{V}}$$

8 boxes

30 May

Red Container @ 64° south

- 3 AWS extensions
- 1 Petman ext
- 2 Shears
- 1 Wind nav

Red Container 2013

30 May

- ① Large Zarges box
- 2 Shiro batteries, 2x 20w and 6x 15w panels
- ② Large Zarges box
- Dome Tent with spare poles
- ③ 2nd dome tent
- ④ 10cm Ø drill Euro Red box
- ⑤ 8cm Ø drill Euro blue box
- ⑥ 5cm drill Euro (poles) black box
- ⑦ 4 grey boxes + 1 grey box with new batteries
- ⑧ Tripod w/ ext lugs, metal box
- ⑨ Ladder for AWS traverse
- ⑩ Small slim box with metal joints + screws
- ⑪ follow box: 3 HPS solar grids, Tower hardware
- ⑫ Small Eddie - Tower hardware

GOES Antenna orientation

SC 207/14
JAR 1 206/14
CP 1 210/13
CDome 213/18
DUE-2 210/16
Saddle 213/16
WASA-SE 214/15
NASA-U 206/10
NEEM 204/8
NASA-E 205(?)
Summit 208/10

Fuel cash SunCam

19 May

2 new fuel drums Nogos
10 canister (200 each) noggas (~1drum)
2 new Propan bottles + 5 = 7

Meter	cash	Swiss	Camp	1949
-------	------	-------	------	------

GPS screws 9 +1

" P O - 6

AWS screws 5

JAP 2 extures 4

6 screws 4

Began Internet Company

Vizadu - Astrum Services

Ashley Hitchell

Customer care@astrum.eads.net

Tel: 1-301-838-7803 com

Coordinates 2013

SC	68° 33' 32"N	49° 21' 10"W	1121m
own 10	69° 30' 12"N	49° 33' 12"W	1216
THR 1.	68° 29' 40"N	49° 42' 26"W	907m
HOP 50	69° 44' 40"N	48° 05' 03"W	
CP 1	69° 52' 31.7"N	47° 01' 01.5"W	
S-Dome	63° 08' 56.6"N	44° 49' 03.7"W	2957m
NASA SE	66° 28' 42.3"N	42° 29' 46.0"W	2383
Saddle	65° 59' 58.9"U	44° 30' 07.6"W	2458
Dyc-2	66° 28' 54"N	46° 17' 18"W	2111
BXSA-n	73° 50' 27.3"N	49° 31' 09.2"W	2460
Hgm	78° 31' 40.0"N	56° 50' 26.0"W	1962
PET	80° 05' 38.6"N	58° 07' 16.0"W	902
GITS	77° 08' 13.4"N	61° 02' 29.4"W	1950
NEEM	77° 26' 28.2"N	51° 04' 54.1"W	2518
TUNN-12	78° 01' 05.1"N	33° 58' 19.6"W	1970
NASA E	75° 00' 05.1"N	29° 59' 13"W	2660
united	72° 34' 46.1"N	38° 30' 20"W	3215

Sunrise Camp mob 88, 162, 146.5605

Sunrise Camp 2 88, 162.146 5616

Vero main 88 163 145 9737

Vero office +299 841 598

Vero mob 1 +299 524 218 ✓

Vero mob 2 +299 524 281

Summit +88 163 145 9738

Simon mob +1720 352 0067

Skindör Norkutair +354 891 6262

Simon mob +720 320 - 6159

Pasmanic +41 44 739 2224

Christoph +41 44 739 2444

Ane Jensen AR Greenland

+299 343146

5325 85 (+299) Malite
G Air Plot

59 4327 (+299) Oruway
Airport

00881641430153 POF
Norland Air Twin OHV Iridium